medium appeared slightly more acid than the control after three weeks' incubation."

Again, our milk from the hospital dairy, although neutral to litmus, is almost invariably as strongly acid as may be used, requiring from 15 to 17 c.c. of decinormal sodium hydroxide per liter to neutralize it, using phenolthalein as an indicator.

Jordan[7] makes the positive statement that the dysentery bacillus is not found in the blood stream.

Castellani and Chalmers[8] state that the dysentery bacillus has been recovered from the blood stream by Rosenthal and Markwald, but give no reference.

The third case was that of an infant, aged eight months, seen during an investigation of a reported outbreak of diarrheal disease at the native village of La Chorrera, August 22, 1910, about twenty-five miles from Panama. The parents gave a history of the child having dysentery. A Löffler blood serum slant was inoculated with swab material from the rectum. Two days later, when the culture reached the laboratory, a saline emulsion of the growth on this slant was made and spread on Endo plates. From these plates several organisms were recovered which conformed culturally with the "Y" organism of Hiss and Russell. These agglutinated with Mulford's anti-dysenteric serum in a dilution of one to one thousand in one-half hour.

To summarize: (1) By the use of a differential medium (Endo's) we have been able to isolate Bacillus dysenteriæ, the "Y" type, from two sporadic cases of dysentery, one a white American, an inhabitant of Ancon, Canal Zone, the other an infant living in and native of the small village of La Chorrera in the Republic of Panama.

2. We have recovered from the circulating blood of a fatal case of dysentery, in our routine blood culture work, Bacillus dysenteriæ, one which agglutinates with antidysenteric serum in a dilution of one to two thousand and is culturally of the Shiga type.

NOTE ON THE FAVORABLE INFLUENCE OF QUININE AND UREA HYDROCHLORIDE IN LARGE DOSES UNDER THE SKIN IN THE TREATMENT OF ACUTE PNEUMONIA, LOBAR AND LOBULAR.[1]

By Solomon Solis Cohen, M.D.,

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There is a long-standing tradition that quinine given early will abort an attack of lobar pneumonia. In an early experience of the writer's, 60 grains of quinine sulphate given in error in a period of five hours, beginning two hours after the initial chill, apparently acted in this manner. Galbraith's revival of the treatment of pneumonia by quinine in massive doses (1904) led the writer to employ it at the Philadelphia General Hospital and at the Hospital of the Jefferson Medical College; soon, however, substituting hypodermic for gastric administration (as advised by Aufrecht, Petzold, and Henry),[2] and choosing the most active salt of quinine, namely, the double hydrochloride of quinine and urea, with which he has had such favorable experience in the treatment of malaria.[3] The initial dose (regulated somewhat by the height of the temperature) is 1 gram to 1.6 grams (15 to 25 grains). This is followed in three or four hours by a second injection, and perhaps by a third and even fourth injection, at some time within the first twenty-four hours, according to results. The same plan is pursued on the second day of treatment and on the third day, if necessary. Usually from 6 to 10 grams are given in from forty-eight to sixty hours. After that smaller doses (5 to 10 grains—0.3 to 0.6 gram daily) are sometimes continued by the mouth.

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[7] General Bacteriology, p. 285.

[8] Manual of Tropical Med., 1910, New York.

[1] Read before the Association of American Physicians at Atlantic City, May 1911.

Cinchonism does not develop. Temperature and pulse-rate fall gradually and proportionately, and respiration more rapidly, with a tendency to restoration of the normal pulse-respiration ratio. Blood pressure may at first decline with temperature and pulse frequency, but soon returns to the former or a higher level; often it remains stationary or increases. The complete clinical picture, so far as regards the rational symptoms, objective and subjective, is thus favorably changed. The patient professes comfort; the pulse is full and strong, of moderate frequency and good tension; respiration is astonishingly easy, even when the rate is not markedly altered; the cough is greatly diminished; and delirium, if present, is abated, or may even cease. Crisis does not occur. Termination is by lysis at about the ordinary time, five to twelve days. The only critical phenomenon observed, and this but rarely and in slight degree, is perspiration. Usually there is some mild sweating with the early fall of temperature and respiration.

Percussion and auscultation signs, however, are uninfluenced. Even when the case is seen and treated comparatively early, dulness and bronchial breathing increase. The rales of resolution appear at the usual time, but not earlier. Involvement of new areas may take place during treatment, with return of symptoms, necessitating new injections. Pneumococcic empyema has occurred. The structural pathological processes, therefore, would appear to evolve in the customary manner, unmodified by the treatment, which is apparently not germicidal. Systematic and accurate quantitative observation of urinary chlorides is lacking, but a few approximations show no apparent deviation from the ordinary rule. Leukocytic studies as yet show nothing definite. A slight increase, not especially affecting any one variety, is the most common observation.

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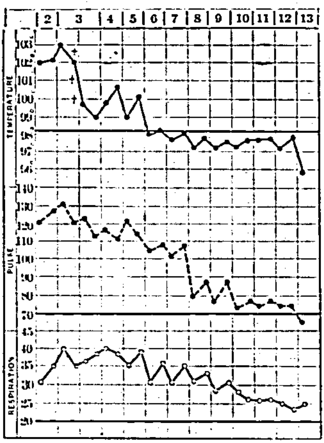
[2] Remarks on the Treatment of Pneumonia, by F. P. Henry, Phila. Med. Jour., February 14, 1903.

[3] Amer. Jour. Med. Sci., September, 1908.

CHART I.*

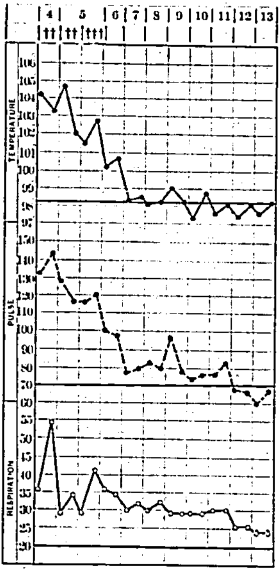


* The numerals at the top of the chart show the day of disease.

Abstract of Case, Chart I. Observations *at first* every four hours; then twice daily. *Acute lobar pneumonia; severe; left apex; alcoholic.* R. M., male, aged sixty years; laborer; colored. Chill; herpes; no jaundice; no vomiting; no delirium; slight cyanosis. Blood culture shows pneumococci. White blood cells, 24,000. †Three injections, 1 gram each; total quantity, 3 grams during twenty hours. First injection on third day; last injection on third day. White blood cells, 32,000 (increase 8000). Duration from chill to resolution, twelve days. Complication, pleurisy. Result, recovery.

The most striking results of the large doses of quinine are thus functional; and since the most significant features are the relief of respiration and the maintenance of normal cardiac vigor and blood pressure, it seems logical to infer that the effect is chemical and antitoxic. This view is further borne out by the absence of quinine intoxication, suggesting a mutual neutralization of disease-poison, and drug. It may be, however, that the antitoxic action is indirect; or that the drug acts, in part at least, as a direct stimulant to the autonomic cardio-respiratory centres. Experimental observations on this point are desirable, but the writer has thus far failed to arouse a sufficiently lively interest in any trained experimentalist.

CHART II.*

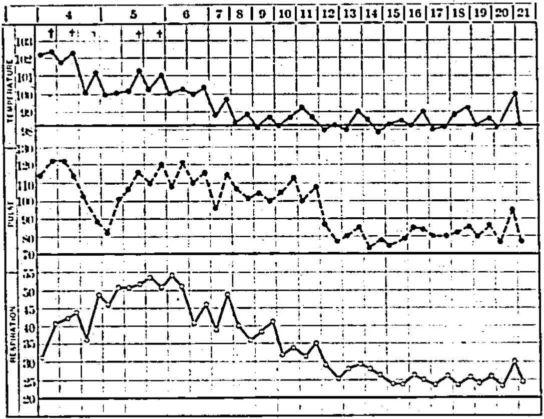


* The numerals at the top of the chart show the day of disease.

Abstract of Case, Chart II. Observations *at first* every fourth hour, then twice daily. *Acute lobar pneumonia; severe; right lower lobe.* S. S., female, aged fourteen years. Pneumococci in sputum; chill; no vomiting; no herpes; no cyanosis; no delirium. White blood cells, 14,000. †Seven injections, 0.5 gram each; total quantity, 3.5 grams in twenty-eight hours. First injection on fourth day; last injection on fifth day. White blood cells, 15,000 (increase 1000). Duration from chill to resolution, thirteen days. Complication, pleurisy. Result, recovery.

The total number of cases of acute lobar pneumonia thus treated and observed with sufficient accuracy for purposes of record was 87, with 16 deaths. Nearly all the deaths, however, occurred at the Philadelphia General Hospital, where the expected mortality of the unfavorable class of cases received is from 25 to 50 per cent., varying with the year. A much larger number of cases than that mentioned was treated by this method in the course of the seven years that it has been carried out in the writer's hospital services, and more recently in private and consultation practice, with a total mortality of 12 per cent. (23 deaths in 192 cases). If alcoholic cases, terminal infections, pneumonia of the aged, patients over fifty years of age, and patients of all ages received on or after the third day of the disease, were excluded, the mortality would be inconsiderable; but to exclude all of these cases would be to exclude also a large proportion of the recoveries. Even in fatal cases the patient's comfort was notably promoted.

Chart III.*

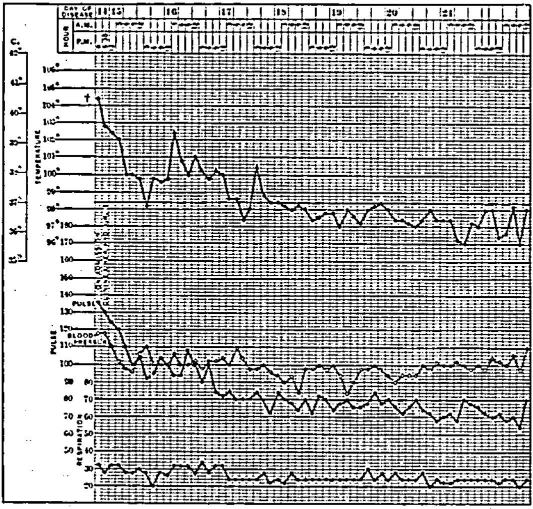


* The numerals at the top of the chart show the day of disease.

Abstract of Case, Chart III. Obervations *at first* every fourth hour; then twice daily. *Acute lobar pneumonia; severe; right lung; left lower lobe.* S. St. L., male, aged twenty-eight years; seaman; black; not alcoholic; no venereal disease. Chill; cyanosis; delirium; no vomiting; no herpes; no jaundice. Pneumococci in sputum. White blood cells, 12,000. Urine contains pus, hyaline, and granular casts; chlorides diminished. †Five injections, 1 gram each; total quantity, 5 grams in sixty hours. First injection on fourth day; last injection on fifth day; fall of temperature after fourth injection. White blood cells, 20,000 (increase of 8000). Delirium abated; duration from chill to resolution twenty days. Complication, pleurisy. Result, recovery. It will be noted in this case that respiration continued to increase until after the fourth injection had been given. This was coincident with extension of the process in the right lung. Blood pressure, which is not shown upon the chart, was, however, favorably influenced from the beginning.

While these studies were in progress, other cases were admitted to the writer's services and recovered without any special medication; the quinine treatment being reserved for cases in which decisive therapeutic intervention seemed necessary. Inclusion of the milder cases among those treated would have lessened the mortality percentage. In the earlier observations patients admitted very late and in bad condition were not given quinine, and recovered or died under other plans of treatment. In the later experience, such patients also received the injections and usually with noticeably

CHART IV



Abstract of Case, Chart IV. Observations every third hour. *Acute pleuropneumonia (lobular), quite severe.* E. L., female, aged twenty-three years. Left upper and lower lobes; right middle lobe. Cyanosis. Not alcoholic; no venereal disease; no chill; no delirium; no vomiting; no herpes; no jaundice. Sputum contains a few gram-positive diplococci, many streptococci and staphylococci. Admitted fourteenth day. Blood pressure below pulse frequency. †One injection, 1 gram. Prompt fall of temperature, pulse, and blood pressure. Subsequent rise of blood pressure beyond pulse frequency. White blood cells, 15,000. Duration to complete resolution twenty-four days (ten days after injection). Result, recovery.

good results. In no case was a bad result observed that could be attributed to the drug. While the statistics of recovery suffered, many individuals got well that otherwise might have perished.

In addition to the use of the quinine salt, fresh air, water, and all other necessary measures of good nursing were provided; and such agents as strychnine, digitalis, alcohol, camphor, opium, cocaine, epinephrin, musk, and alkaline diuretics were administered when symptomatically indicated. Special attention was paid to the consonance of pulse rate in beats per minute with systolic blood pressure, measured in millimeters of mercury, as advised by G. A. Gibson,[4] of Edinburgh, and by Hare;[5] excess of the number representing frequency over that representing pressure thus measured, being met by appropriate medication. In a number of cases saline infusion was also used, and in some of these, oxygen as well; the latter measure chiefly as a palliative in the fatal cases, as in those cases which ran a favorable course it did not often seem to be necessary. In the cases treated during the last two years, sodium bicarbonate or ammonium compounds were given in sufficient quantity to keep the urine alkaline throughout the course of the attack, and this seems to have been of benefit. Following Galbraith's plan, tincture of ferric chloride was given when the quinine was withdrawn. Lobular pneumonia was influenced favorably in a similar manner to lobar pneumonia.

Four charts are selected for reproduction as illustrative of different types of cases.

In *making the injection*, the following precautions, published by the writer in 1887, and several times since, must be observed; otherwise there may be cellulitis, slough, or abscess. The syringe is filled with a 50 per cent. solution of the quinine and urea salt in sterilized water; and the needle is inserted deeply, through skin previously painted with tincture of iodine, into a muscle. The syringe is emptied thoroughly, so that solution does not drop upon the skin when the needle is withdrawn. The point of puncture is sealed with iodoform-collodion. Thousands of injections have been made in this manner without ill-result of any kind.

BRONZED DIABETES. REPORT OF A CASE WITH SPECIAL REFERENCE TO THE INVOLVEMENT OF THE PANCREAS IN DIABETES.

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and

Lindsay S. Milne, M.D.,

Senior Assistant of the Russell Sage Institute of Pathology, New York.

The following case when first seen was readily diagnosticated as an example of that rare symptom complex or combination of diseases picturesquely named by the French "Bronzed Diabetes."

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[4] Edinburgh Med. Jour., January, 1908, lxv, 22; G. A. Gordon, Ibid., January, 1910, n. s. iv, p. 37.

[5] Therap. Gaz., 1910, xxxiv, 397.